

HARMONIC NSG 9000 6G

SCALABLE UNIVERSAL EDGEQAM



The NSG 9000-6G is one of the Harmonic high density Universal EdgeQAM systems, capable of reaching up to 144 QAM RF outputs per unit. The device is designed as a highly integrated digital video gateway which multiplexes on-demand content streamed over an IP network.

- True universal EdgeQAM, able to support VOD, SDV, BCST and M-CMTS services concurrently
- High density, modular 2-RU system capable of hosting up to nine QAM RF output modules
- Dual redundant, load sharing power supplies
- Hot swappable QAM RF modules containing 2 RF ports capable of outputting up to 8 QAM channels each in semi-flexible QAM locations
- Processing module with 8 GbE SFP cages supports up to 6 Gbps in total using both copper and/or FO links
- DOCSIS 3.0 ready
- Controlled via the Mass Configuration Tool (MCT), an HTTP web GUI or Command Line Interface (CLI)
- Motorola Privacy Mode support
- GbE port redundancy supporting multiple redundancy schemes
- Supporting 1:1 device redundancy using EdgeCluster technology

SPECIFICATIONS

GIGABIT ETHERNET INPUT	
Type	Gigabit Ethernet 802.3z
Ports	8 Independent ports
Connector	8 x SFP cages
I/O Speed (1Gbe ports)	1 x 960 Mbps per port
IP Encapsulation	MPEG TS over UDP/IP/MA 1 to 7 TS/ IP
MPEG Format	188 Bytes per TS packet
I/O Processing	Up to 960 Mbps per port
Total Processing Capacity	Up to 6 Gbps
Addressing & Protocols	Unicast (UDP, L2TPv3), Multicast (IGMPv1,v2,v3)
Management	ARP, ICMP
Monitoring	GbE port forwarding
Redundancy	4 x (1 + 1), 2 x (3 + 1)
ASI MONITOR PORT	
Type	ASI Output
Connector	BNC, 75Ω
Configuration	Configurable mirroring per QAM
MPEG Format	188 Bytes per TS packet
MANAGEMENT INTERFACES	
Ethernet	2 x 10/100 Base-T
Connector	RJ-45 (1 Management, 1 CAS)
Serial Port	RS232

RE-MULTIPLEXING		
PID	Re-mapping & remultiplexing	
PSI/SI	PAT/PMT extraction and generation	
SCRAMBLING		
Motorola Privacy Mode		
MANAGEMENT		
Standalone Control	NSG Web-client Command Line Interface (CLI) through SSH/Serial	
Mass Configuration	Mass Configuration Tool (MCT)	
NMS	Harmonic NMX Digital Service Manager (monitoring only)	
Protocols	TCP/IP, RPC SNMP v1,v2c,v3 HTTP, HTTPS, SCP, RS-232	
REDUNDANCY SCHEMES		
Device Redundancy	EdgeCluster	
GbE Port Redundancy	4 x (1 + 1), 2 x (3 + 1)	
Socket Redundancy	Inter-port socket redundancy (BCST pass-through) Intra-port socket redundancy (ISA-SDV)	
ENVIRONMENTAL		
Operating Temperature Range	32°F to 122°F 0°C to 50°C	
Storage Temperature Range	-40°F to 158°F -40°C to 70°C	
Relative Humidity	0 to 95% non-condensing	
Operating Altitude	Up to 15,000 feet (4,572 meters)	
Storage Altitude	Up to 12,192 meters (40,000 feet)	
PHYSICAL		
Input Voltage	85-264 VAC, 47-63 Hz 36- 72 VDC	
Power Consumption	537W @ 220VAC 553W @ 110VAC 553W @ -48VDC	
Power Modules	1+1 redundant AC/DC, load sharing power supplies	
Rack Space	2-RU	
Dimensions (W x H x D)	19 in x 3.47 in x 20.75 in 48.26 cm x 8.81 cm x 52.7 cm	
Weight		
Chassis and processing board	34 lb / 15.4 Kg	
Power supplies	3.9 lb / 1.8 Kg	
RF Module	2.2 lb / 1.0 Kg	
QAM RF		
RF Module Type	NSG-8R1G	
Connector	F-Type, 75 Ω	
Ports	2 RF ports per module	
RF Output Power per Channel		
N=1	Annex A 62 dBmV	Annex A 62 dBmV
N=2	59 dBmV	59 dBmV
N=3	57.2 dBmV	57.2 dBmV
N=4	56 dBmV	56 dBmV
N=6	53 dBmV	54.2 dBmV
N=8	N/A	52 dBmV
RF Frequency Range (Annex B,C)	53 MHz to 999 MHz ±3 KHz, 62.5 KHz steps	
RF Frequency Range (Annex A)	54 MHz to 998 MHz ±3 KHz, 62.5 KHz steps	
QAM Constellations	Annex A,C Annex B	16, 32, 64, 128, 256 64, 256
Bandwidth	Standard: 6 MHz or 8 MHz Non-standard: 5.65 MHz to 8 MHz	
QAM Density per Port (Annex B,C)	1-8 semi-flexibly located QAM channels	
QAM Density per Port (Annex A)	1-6 semi-flexibly located QAMchannels	
QAM Encoding	ITU-T J.83 Annex A (DVB), B, C (Japan)	
RF Output Power Adjustment Range	8 dB in 0.1 dB steps	
Output Return Loss	14 dB within any channel from 50 MHz to 1002 MHz (typical > 16 dB)	